Alfalfa Hay for Horses: Myths vs. Reality

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How Much Hay Does A Horse Need?

A horse owner once described their Quarter Horse gelding as "a hole in the stall that I throw hay into"! This description is certainly accurate….a 1200 lb gelding used for light recreational riding will consume about 700 lbs of hay per month during the winter in Kentucky. If the horse is kept in a place with minimal pasture, yearly hay consumption will be about 4 tons. Restricting hay intake can lead to digestive disturbances and behavior problems, so it is recommended that most horses be allowed access to 1.5 – 2.0 lbs of hay (or pasture equivalent) for each 100 lb of body weight (so 18 – 24 lb of hay for a 1200 lb horse). The amount of hay a horse needs will be influenced by the nutrient requirements of the horse as well as the nutrient content of the hay, and any other feeds the horse is receiving. Lactating mares will consume higher amounts of forage than horses at maintenance. Elite performance horses and weanlings might receive somewhat lower levels of forage because they will be receiving significant amounts of concentrate. Nonetheless, the ***minimum*** hay (or pasture) intake for any horse should be above 1 lb of hay for each 100 lb of body weight. When choosing, or producing, hay for horses, several factors should be considered. Cleanliness of the hay, nutrient value, palatability and cost are all important.

Is It Okay to Feed Moldy Hay to My Horse?

Hay that is high in dust or mold can irritate the horse's respiratory tract. Optimum athletic performance depends on a healthy respiratory tract, therefore dusty/moldy hay should never be fed to horses used (or intended for) athletic events. A chronic respiratory disease commonly called "heaves" can be aggravated by moldy and dusty hay. Horses with heaves can have so much difficulty breathing that even mild exercise is impossible. In addition, moldy hay can contain toxins that can affect the horse if they are ingested.

Horse owners should not rely on the nutritional wisdom of horses to prevent problems associated with moldy hay. Horses will usually avoid small patches of moldy

hay, but selectivity decreases as hunger increases. Also, in one study horses accepted slightly moldy red clover just as readily as clean alfalfa!

Is it True that Alfalfa Can Make Horses Sick?

Good quality alfalfa hay that is fed in appropriate amounts will not make normal horses sick. Allowing horses unlimited access to very high quality alfalfa hay may result is some digestive upset (such as diarrhea). Horses that have restricted exercise and low nutrient needs can also get too fat if too much high quality alfalfa hay is fed. Therefore, it may be necessary to restrict the amount of very high quality alfalfa that is fed to some horses; especially those with lower nutrient requirements. High quality alfalfa is most useful for horses with high nutrient requirements such as weanlings. Mid and late bloom alfalfa hay as well as alfalfa-grass mixes can be fed to most classes of horses.

Recent research suggests that alfalfa can be more beneficial to the equine digestive tract than some other hays. Many performance horses develop stomach ulcers. No one understands exactly why horses get stomach ulcers, but stress and diet have been proposed as the two most likely causes. A study at Texas A&M University examined the stomachs of horses in training that were receiving diets of forage and grain. When alfalfa was used as the forage, the incidence and severity of the stomach ulcers was less than when grass hay was used as the forage. This study supported an earlier experiment in Tennessee that suggested that a high concentrate diet that contained alfalfa hay was healthier for the stomach than a diet that utilized grass hay. These researchers have suggested that alfalfa might buffer stomach acid more effectively than grass hay because it is higher in calcium, protein and potassium.

Horse owners should be aware that alfalfa hay has been associated with a few problems in horses. Alfalfa hay that may be contaminated with blister beetles should not be fed to horses. Blister beetles contain a toxin that can be fatal to horses. In some parts of the U.S., a small percentage of horses fed alfalfa hay have developed intestinal stones. These “enteroliths” are composed of magnesium and other minerals that collect around some type of small object. If an enterolith becomes large enough it can block the gastrointestinal tract and cause colic, and potentially death. Although enteroliths can occur, their incidence is quite low.

Doesn’t the High Protein Content of Alfalfa Cause Problems?

A normal adult horse will not be negatively affected in any way by a diet that contains a small or moderate excess in protein. On a dry matter basis, good quality spring pasture grass contains about the same concentration of crude protein as average mid to late bloom alfalfa hay. The excess nitrogen in high protein feeds will be excreted in the urine, so horse owners that feed alfalfa to adult horses may find that the horses drink more water and urinate more than when they use a grass hay.

It is a common myth that excess protein causes bone and joint problems in growing horses. Research studies have found that excess calories and rapid growth may predispose horses to growth problems but that excess protein alone is not a factor.

Isn't Hay Just Filler?

No! Hay (or pasture) is an important source of nutrients for all types of horses. Good quality alfalfa or alfalfa-grass hay can meet most of the nutrient needs of adult horses at maintenance, broodmares in early gestation and adult horses in light work. These horses may need a salt source and possibly a small amount of additional supplementation, but hay (or pasture) should comprise the majority of their diet.

Horses with higher requirements (lactating mares, growing horses, horses in moderate or heavy exercise) can obtain 50-70% of their nutrients from good quality alfalfa or alfalfa-grass mix hay, and the remainder from a grain-based concentrate. The amount and composition of the concentrate should be adjusted to complement the type and amount of hay that is being fed.

How Important is Price?

Hay purchases should be based on ***value.*** A "high-value" hay is highly palatable. Lower quality hay is often lower in palatability. Hays that are lower in palatability will have higher rates of waste. If the hay has fewer nutrients per pound, it will be necessary to feed more pounds to achieve the same nutrient intakes, or it will be necessary to provide more supplemental concentrate. A high-value hay is one that contributes to the most economical feeding program while still providing adequate nutrition.

Table 1 gives a few examples of how hay quality and price are related to the total cost of a feeding program. These examples are only for illustration of the principals. New calculations must be made for each feeding situation because the prices of hay and concentrate will vary.

Hay should be purchased on an equivalent weight basis. Comparing prices by the ton is easy. "By the bale" prices should also be converted to a weight basis. Hay that costs $5.00/bale can be less expensive per pound than hay that costs $4.50 a bale, depending on the size of the bale. If the $5 hay weighs 65 lb then the hay costs 7.7 cents a pound. If the less expensive hay bale weighs 45 lb then the cost per pound is 10 cents! Horses eat by the pound….not by the bale!

Table 1: Effect of Hay Quality on Total Monthly Feeding Costs

EXAMPLE HAY AND CONCENTRATES

	Alfalfa* (mid-bloom)	Timothy/Orchardgrass** (late maturity)
Hay Cost/ton	$200	$140
Hay Cost/lb	$0.10	$0.07
Concentrate Cost/50lb bag***	$10.00	$11.00
Concentrate cost/lb	$0.20	$0.22

EXAMPLE HORSES

1200 lb gelding, light exercise (no available pasture)		
Total Hay Fed	22 lb	22 lb
Daily Hay cost	$2.20	$1.54
Expected Wasted Hay	1 lb	3 lb
Hay Consumed	21 lb	19 lb
Concentrate Needed	2 lb	6 lb
Concentrate Cost	$0.40	$1.32
Total Feed Cost/day	$2.60	$2.86
Total Feed Cost/month	$78	$86

1200 lb mare, lactating (no available pasture)		
Total Hay Fed	30 lb	30 lb
Daily Hay cost	$3.00	$2.10
Expected Wasted Hay	2 lb	5 lb
Hay Consumed	28 lb	25 lb
Concentrate Needed	6 lb	11 lb
Concentrate Cost	$1.20	$2.42
Total Feed Cost/day	$4.20	$4.52
Total Feed Cost/month	$126	$136

*Midbloom alfalfa containing 0.9 Mcal of digestible energy per pound (as fed)
**Late maturity Timothy/Orchardgrass containing 0.7 Mcal digestible energy per pound (as fed)
***Concentrate with more fortification required when grass hay is fed

Where Can I Get Additional Information?

Alfalfa Hay: The High Quality Hay for Horses. Accessed on 1/15/09. Available at http://www.alfalfa.org/pdf/Alfalfa%20for%20Horses%20Revised.pdf

The Nutrient Requirements of Horses. National Research Council. 2007. National Academy Press, Washington DC

Southern Forages. Ball, D.M., C.S. Hoveland and G.D. Lacefield. 2002. PPI. Norcross Georgia

Gastric ulcer syndrome in exercising horses fed different types of hay. Lybbert, T., P. Gibbs, N. Cohen and D. Sigler. 2007. Proc. Equine Science Symposium. Baltimore, MD.

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